

**Fremont Lake**  
Newaygo County  
Muskegon River Watershed, last surveyed 2025

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**Environment**

Fremont Lake (Figures 1-3) is a natural lake of glacial origin located in the southern portion of Newaygo County. The City of Fremont is located just to the northeast of the lake. Fremont Lake has a surface area of 790 acres and a shoreline length of approximately 5.1 miles (O'Neal 2010). The maximum depth of Fremont Lake is 86 feet. Fremont Lake lies in the Muskegon River Watershed, and its outflow forms the headwaters of Brooks Creek, which flows into the Muskegon River. The Fremont Lake watershed is just over 19 mi<sup>2</sup> and is fed by several small tributaries, the most significant of which is Daisy (also sometimes known as Darling) Creek (O'Neal 2010). Substrates in Fremont Lake consist primarily of marl, sand, and organic.

According to the Michigan Glacial Lakes Partnership (MGLP) Conservation Planner (<http://ifrshiny.seas.umich.edu/mglp/>), the land use surrounding Fremont Lake consists of primarily of agriculture and urban, with only small percentages of undeveloped land uses like forest, wetland, and grassland. The shoreline of Fremont Lake is heavily developed with private residences, along with accompanying docks, hoists, and shoreline armoring. Despite this, approximately 31% of the Fremont Lake shoreline is intact wetland. While land ownership around the lake is almost entirely private, Fremont City Park along the north shore of the lake offers a boat launch, campground, and beach. Another access point is Sheridan Park, located along the southern shore of the lake. Sheridan Park offers shore fishing opportunities and a boat launch and is administered by Sheridan Township.

There is one known citizen-based group that advocates for Fremont Lake- the Fremont Lake Association, which was incorporated in 2007. The mission statement for the group is as follows: “The purpose of the Fremont Lake Association (FLA) is to improve the water quality of Fremont Lake and its watershed through research, education and actions leading to lake maintenance and improvements; promote activities which enhance the social welfare of its members & provide pertinent information through its website, newsletter and meetings as appropriate.” (Fremontlake.net). The FLA is also partially responsible for aquatic nuisance plant treatments, along with Sheridan Township and the City of Fremont.

**History**

Fremont Lake has a long fisheries management history, dating back to the late 1800s. The entire area within the Fremont Lake watershed was stripped of timber in the late 1800s, likely causing negative impacts on water quality. The original fish community included Cisco, which have since been extirpated (O'Neal 2010). Notes from a 1926 Michigan Department of Conservation (MDOC; the precursor to the Michigan Department of Natural Resources or MDNR of today) fisheries survey mention that Cisco were present in 1892, 1894, and 1906, but not since (MDNR files, Cadillac). The 1926 survey notes also refer to sewage and factory waste entering Fremont Lake in 1923 and also refers to the water clarity as “murky.” Fremont Lake was plagued with pollution issues for much of the 20<sup>th</sup> century (Trimberger 1982; MDNR files, Cadillac). There are numerous filed correspondences that discuss pollution and resulting algae blooms and fish kills over the years. One particular note mentions

an electrofishing survey being cancelled in 1969 because a severe algae bloom was obscuring visibility in the water. Much of the pollution was attributed to the Gerber factory, along with poor agricultural and sewage treatment practices. The use of copper sulfate for algae control commenced as early as 1966.

Fremont Lake also became overrun with invasive Common Carp in the early 1900s. According to O'Neal (2010), Common Carp were never stocked in Fremont Lake. Although it is unknown when they first made it to the lake, they were present by at least the 1920s (MDNR files, Cadillac). Since they were never stocked, it is likely that they entered the lake by migrating upstream through Brooks Creek. Over the years, numerous attempts were made at controlling Common Carp in Fremont Lake, all of which were unsuccessful. These included a partial rotenone treatment attempted in 1957, and an industrial-style seining effort in which several tons of Common Carp were removed from the lake between 1954 and 1962 (Trimberger 1982). Neither of these efforts had any meaningful impact on the Fremont Lake Common Carp population.

A fisheries survey conducted by MDNR in 1981 found that Common Carp composed 75% of the survey catch by number, and 82% by weight. That led MDNR to attempt a manual removal in the spring of 1982, with the goal of removing 400,000 lbs. of Common Carp. Despite setting over 5 miles of gill nets and 15 fyke and trap nets in the effort, only about 8,500 lbs. were removed. This led MDNR to develop a plan to chemically kill all fish in the lake and then re-stock it. The proposal was accepted by the Fremont Lake Association and the general public (Trimberger 1982).

That led to a rotenone treatment in the fall of 1982 in which the entire surface area of Fremont Lake was treated (Smith 1981, Trimberger 1982), with the goal being a complete kill of the entire Fremont Lake fish population. After the treatment, the lake was re-stocked with native species along with Rainbow and Brown Trout. Although short-term fisheries management gains were realized, the treatment was ultimately unsuccessful in eradicating Common Carp, as they were rediscovered in Fremont Lake shortly after the treatment. They still exist in Fremont Lake at nuisance levels.

Other Fremont Lake issues over the years include chemical treatments for aquatic nuisance plant species, including curly leaf pondweed and Eurasian milfoil which began in 1987 and are still conducted annually. Zebra mussels were first reported from Fremont Lake in 2003 and have been present since then. During a drought in 2004, no water was flowing over the lake level control structure. This temporarily de-watered Brooks Creek and resulted in a fish kill in Brooks Creek (MDNR files, Cadillac).

### Fish Stocking

The first records of fish stocking in Fremont Lake date back to 1876 when Lake Whitefish were stocked by the Michigan Fishery Commission (Table 1). Lake Trout were stocked from 1893 through 1895, and Largemouth Bass were first stocked in 1910. Emerald Shiners were stocked into Fremont Lake (and a number of other Michigan inland lakes) in the 1930s in an attempt to establish a prey-base for predator fish in those lakes (Table 1; Cooper 1934).

Between 1935 and 1943, adult Walleye were stocked into Fremont Lake by the MDOC from the "Newaygo Transfer" on the Muskegon River (Table 1; Eschmeyer 1947). In the Newaygo Transfer, adult Walleye (and other species, including Northern Pike and Steelhead) were dip netted below the Newaygo Dam and transferred into the Muskegon River impoundments (Croton, Hardy, and Rogers),

and other area lakes, including Fremont. Other warm and cool water species, including Bluegill, Yellow Perch, Largemouth Bass, and Smallmouth Bass were stocked into Fremont Lake between 1933 and 1944 (Table 1). Yearling Rainbow Trout were stocked in 1971 and 1973.

After the whole-lake rotenone treatment of 1982, many different species of fish were stocked to re-establish their populations in Fremont Lake. In 1983, native species that were re-stocked included Black Crappie, Bluegill, Largemouth Bass, Smallmouth Bass, Walleye, and Yellow Perch (Table 1). In addition, yearling Brown and Rainbow Trout were stocked to create an interim fishery until the native species could re-establish their populations. Rainbow and Brown Trout were stocked until 1991. Since then, only Walleye have been stocked in Fremont Lake (Table 1). In recent years, the goal has been to stock Fremont Lake every other year with 39,500 spring fingerling Walleye (a rate of about 50/acre).

#### Chronology of Fisheries Surveys

The first fisheries survey of Fremont Lake was conducted in 1892 by the Michigan Fishery Commission (MDNR files, Cadillac). Gill nets and hook and line were the primary gears used in the survey. Fish species documented in the survey included Cisco, Largemouth Bass, Northern Pike (referred to as “Pickerel”), Bluegill, Black Crappie (referred to as “Calico Bass”), Yellow Perch, Rock Bass, White Sucker, Pumpkinseed, Bullhead, and Golden Shiner (Table 2). The deepest point in Fremont Lake was recorded as 102 feet, and notes from the survey report that the fish were “in good condition, large and fat”. The report recommended stocking “Wall Eyed Pike” (Walleye), Smallmouth Bass, and “Salmon Trout”. It is unknown what species the writer was referring to when recommending “Salmon Trout”.

Another survey was conducted in 1926. Details are sparse, but the survey method was likely seining. A total of 16 species were recorded (Table 2). The researchers reported good numbers of Bluegill fry but mentioned that the lake was “understocked with bass, especially Smallmouth Bass”. They recommended stocking Largemouth and Smallmouth Bass.

Additional seine surveys were conducted in 1934, 1935, 1938, and 1941. These surveys were attempts to document the success or failure of the Emerald Shiner stocking of 1934 (Cooper 1934; Cooper 1935; and Carbine 1941). Although numerous other species were caught in the surveys (Table 2), Emerald Shiners were only caught in the 1935 effort (Cooper 1935). Eventually the experiment was deemed unsuccessful (Carbine 1941). No Emerald Shiners have been captured in any fisheries surveys of Fremont Lake since then (Table 2).

A more comprehensive fisheries survey was conducted on Fremont Lake by MDOC in 1952. Gear used in the 1952 survey included gill nets and seine nets. A total of 18 different species were caught in the survey (Table 2). In a short writeup for the survey, MDOC Fisheries Biologist I. A. Rodeheffer reported that Fremont Lake was an “exceptionally good fishing lake for crappies and perch”. He also reported that the lake was being heavily polluted by the Gerber plant and that severe algae blooms and fish kills were regular occurrences on Fremont Lake, and that dissolved oxygen “practically disappears in the thermocline now” (MDNR files, Cadillac).

Another MDOC survey of Fremont Lake was conducted in 1969. This one utilized fyke and gill nets. Electrofishing was attempted but not successful because the algae was so thick that there was no visibility. A total of 12 species were caught in the survey (Table 2). MDOC Fisheries Biologist Bill Bullen commented that there was an “excellent perch population” present, and that fishing was “good

for crappies”. He also mentioned the extreme abundance of Common Carp, and that the nets were set to avoid them if possible.

Another limited gill net survey was conducted by MDOC in May of 1972 in an attempt to evaluate the 1971 stocking of Rainbow Trout (Table 1). Only a few fish were caught in the survey, and no Rainbow Trout were caught. Fisheries Biologist Bullen reported that a “tremendous 1971-year class of carp could be seen along the shore”, and that “the 1971 crappie year class also looks abundant”.

A fisheries survey was conducted by MDNR in May of 1981 with the purpose of determining the abundance of Common Carp in proportion with the other fish species of Fremont Lake. Gear used included gill nets, trap nets, and fyke nets. Although a total of nine fish species were caught in the survey (Table 2), the catch consisted of 75% Common Carp by number, and 82% by weight. This led to another effort in May of 1982 in which MDNR crews set nets into Fremont Lake with the goal of removing Common Carp. A total of 12 species were caught in that survey (Table 2).

In the fall of 1983 (approximately one year after the rotenone treatment), an electrofishing survey was conducted by MDNR to determine how the rehabilitation of the lake was progressing. Seven species were caught in the survey (Table 2). Survey notes indicate that the trout were “robust and healthy looking”, that survival of stocked Walleye fingerlings was evident, and that Largemouth Bass were already overabundant.

Three electrofishing surveys were conducted by MDNR in May and June, 1984, specifically to detect Common Carp. Unfortunately, Common Carp were found to be present, albeit in small numbers. Eight other species were encountered as well (Table 2). A netting survey was conducted in June 1985, along with more electrofishing surveys in September and October 1985. These surveys caught 12 species (Table 2). No reports were produced, but Bluegill, Brown Trout, and Largemouth Bass were the most abundant species found in these surveys (MDNR files, Cadillac). Common Carp were also captured in the 1985 surveys. In October 1987, a one-night netting survey was conducted, with trap and gill nets deployed. Ten fish species were caught (Table 2). Survey notes report that Common Carp were abundant and represented half the catch by weight. Another gill net survey was conducted in December of 1988, but very few fish of any kind were caught in the effort.

Two gill net surveys were conducted on Fremont Lake by MDNR in October 1990 and July 1991. These surveys were targeting the stocked Rainbow and Brown Trout. Angler reports had indicated that fishing for the stocked trout had greatly diminished in the previous several years. Although ten species were caught in the two surveys (Table 2), neither Brown nor Rainbow Trout were among them. MDNR Fisheries Biologist Rich O’Neal surmised that chemical treatments for nuisance aquatic plants were creating problems for trout survival, and he recommended discontinuing the stocking of trout. No more trout were stocked in Fremont Lake after 1991.

The next MDNR fisheries survey of Fremont Lake was conducted in 1997 and consisted of gill nets and trap nets set for one night in June and one night in September, along with an electrofishing effort in September. The majority of the catch biomass was made up of three species- Common Carp, Northern Pike, and Walleye. Fisheries Biologist Rich O’Neal reported that Walleye fishing reports were good, and that the stocking program appeared to be supporting the Walleye Fishery (O’Neal 1997).

A comprehensive fisheries survey was conducted on Fremont Lake by MDNR in the spring of 2009. MDNR Status and Trends survey protocols (Wehrly et al. 2009) were used for the survey. Netting with trap nets and inland gill nets was conducted from June 8 to 11, while seining and electrofishing was conducted on June 24. In the 2009 survey, a total of 616 fish were caught, representing 15 species (Table 2). Catch rates for Bluegill and Pumpkinseed were low compared to other Michigan lakes, likely indicating low populations of these species (O'Neal 2010). The Walleye catch in the 2009 survey was robust, with 60 caught ranging from 6 to 24 inches in length and representing 7 different age classes (of which four were stocked). The Walleye were growing extremely well, exceeding the state average by 2.2 inches.

In the spring of 2022, a mark-recapture fisheries survey was conducted by the MDNR Tribal Coordination Unit on Fremont Lake with the goal of establishing a population estimate for adult Walleye (Martin 2023). Gear utilized in the survey included trap nets and electrofishing for marking the Walleye, and electrofishing for recapture. The effort resulted in an estimate of 1,944 adult Walleye present in Fremont Lake. This exceeds the target density of 2 adult Walleye per acre identified in the Michigan Fish Stocking Guidelines II (Dexter and O'Neal 2004). Martin (2023) noted the heavy presence of stocked Walleye year classes, although one unstocked year class represented nearly 1/3 of the overall Walleye catch. Other fish species observed in large numbers in the survey effort included Northern Pike (424 from 9 to 30 inches, averaging 21.3 inches) and Black Crappie (over 200 that averaged 6 inches in length).

In October of 2005, the first of three fall electrofishing surveys targeting juvenile Walleye was conducted on Fremont Lake (O'Neal 2006) according to protocols outlined by Serns (1982 and 1983) and subsequently updated by Ziegler and Schneider (2000). Fall Walleye electrofishing surveys have been conducted on Fremont Lake in 2005, 2018, and 2022 (Tonello 2019; Martin 2023; Table 3). The goal of these surveys is to assess Walleye year class strength (both stocked and wild) by targeting juvenile Walleye in the nearshore and shallow areas of the lake. Spring fingerling Walleye were stocked in each of these years. Catch rates for juvenile Walleye were good in 2018 but were poor in 2005 and 2022 (Table 3). The 2018 survey was conducted partially in response to a fish kill that occurred in the summer of 2018 in which large numbers of dead adult Walleye were observed (Tonello 2019).

Fremont Lake is one of the more popular lakes in Michigan for bass tournaments. Between 2016 and 2024, there were 162 tournaments conducted on Fremont Lake. This ranked Fremont Lake as the 33rd most popular lake in Michigan for bass tournaments. In the 162 tournaments on Fremont Lake, a total of 7,174 bass were reported as caught. Of those, approximately 87% were Smallmouth Bass, and 13% were Largemouth Bass. The average heaviest bass in those tournaments was 4.14 lbs., while the statewide average is 3.9 lbs. Approximately 2% of the bass entered in the Fremont Lake tournaments were over 4 lbs. (Tom Goniea, MDNR Fisheries Division, unpublished data). The average weight of individual bass entered in Fremont Lake tournaments was 2.44 lbs., while the average length was 15.4 inches.

Since 1994, 38 exceptional fish (10 species) caught from Fremont Lake have been entered in the MDNR Fisheries Division Master Angler program (Table 4). Bluegill was the most frequently entered species, with 9 entries, followed by Black Crappie with 8 entries.

### Current Status

The most recent fisheries survey of Fremont Lake was conducted in the spring and summer of 2025. MDNR Status and Trends survey protocols (Wehrly et al. 2009) were used during the survey. The purpose of the spring and summer 2025 fisheries surveys was to assess the overall fish community of Fremont Lake. The netting portion of the survey took place from May 19 through May 22, 2025. Gear used included two trap nets (6 net-nights), three large-mesh fyke nets (8 net-nights), two experimental graded-mesh inland gill nets (4 net-nights), and two small-mesh fyke nets (6 net-nights). Seining and electrofishing were conducted on May 29. Five seine hauls were completed, along with three ten-minute electrofishing transects. Total length by inch class (e.g., 7-inch class = 7.0-7.9 inches) was recorded for all fish captured. Weights for all fish species were calculated using the length-weight regression equations compiled by Schneider et al. (2000b).

The 2025 surveys caught 1,141 fish, representing 15 different species (Tables 2, 5, and 6). Numerically, Bluntnose Minnow (n=537), Yellow Perch (n=147) and Black Crappie (n=126) were the most numerous species. Predators (Largemouth Bass, Northern Pike, Smallmouth Bass, and Walleye) composed just over 70% of the fish biomass. Only 5 Common Carp were caught, composing only 4.6% of the biomass in the survey.

Ages for gamefish species were measured using scale or spine samples collected from up to ten fish per inch group. Weighted-age compositions of gamefish populations were calculated as described by Schneider (2000b). Mean length-at-age was used to obtain a growth index by calculating the difference from the state average length (Schneider et al. 2000a). The mean growth indices for gamefish species was generated by averaging the growth indices for each age class that was represented by at least five fish. Growth rates were compared to the state average for each game species (Table 7).

Growth rates in Fremont Lake for Largemouth Bass, Northern Pike, Smallmouth Bass, and Walleye exceeded the state average, while Black Crappie and Yellow Perch were just below the state average. (Table 7). Not enough Bluegill from any one age group were caught to estimate growth rate. The size structure of the Largemouth Bass, Northern Pike, Smallmouth Bass, and Walleye populations were excellent, with many individuals present of the larger sizes preferred by anglers (Table 6). Although age and growth analysis was not conducted for Rock Bass, most of the 70 Rock Bass present in the catch were larger than 8 inches.

Shoreline data were collected from Fremont Lake by MDNR Fisheries personnel in August 2025, according to protocols outlined in Wehrly et al. (2009). Data collected included the number of docks, submerged trees, and houses observed per kilometer of shoreline, as well as how much of the shoreline is armored or hardened with seawalls or rip rap to prevent erosion. Fremont Lake averaged 18.4 docks, 64.3 submerged trees and 16.5 houses per kilometer of shoreline. Armoring structures and materials were present along 56% of the lake shoreline (Table 8). A temperature/dissolved oxygen profile was also collected on August 15, 2025. The profile was taken in the deepest part of the lake. Oxygen levels suitable for fish were found to a depth of about 19 feet (Table 9).

### **Analysis and Discussion**

The 2025 MDNR fisheries survey of Fremont Lake was successful in that it provided current information on the fish populations of Fremont Lake, and particularly those species that anglers like to pursue. The 2009 (O'Neal 2010) and 2025 fisheries surveys of Fremont Lake were similar in nature and timeframe, allowing for some comparison.

Predator species, including Largemouth Bass, Smallmouth Bass, Northern Pike, and Walleye composed the majority of the biomass in the 2025 survey and provide the best angling opportunities on Fremont Lake. All four of these species have robust populations in Fremont Lake with good size structure and growth rates (Tables 6 and 7). The populations of these species have not changed substantially since the 2009 fisheries survey (O'Neal 2010).

Largemouth Bass, Northern Pike, and Smallmouth Bass are self-sustaining with no stocking required, however, Walleye continue to be stocked into Fremont Lake by MDNR Fisheries Division. Most of the Walleye caught in the 2025 survey were from stocked year classes, indicating that stocking is critical to maintaining a "fishable" Walleye population in Fremont Lake. In particular, the 2022 stocked Walleye year class seems to be strong, as that year class composed nearly 65% of all Walleye aged in the 2025 survey. Walleye natural reproduction does occur occasionally in Fremont Lake (Martin 2023), but it is not sufficient to maintain the Walleye population at the level desired by anglers.

Although no panfish species was abundant in the 2025 survey, Black Crappie, Yellow Perch, and Rock Bass were the most numerous panfish species caught (Table 5). One factor in the extremely low catches of Bluegill and Pumpkinseed may have been the cold weather and water temperatures encountered during the 2025 survey. While more Bluegill and Pumpkinseed were caught in the 2009 survey than in the 2025 survey, neither species was numerous in the 2009 survey (O'Neal 2010). Although 147 Yellow Perch were caught in the 2025 survey, most of them were smaller than the minimum acceptable size of 7 inches. While Fremont Lake will likely never be a destination panfish fishery, the Black Crappie and Rock Bass should provide opportunities for anglers who do not want to target the larger gamefish. Although Bluegill and Pumpkinseed were not numerous in Fremont Lake, MDNR Master Angler records indicate that some large individuals are occasionally caught (Table 4).

While Common Carp has been a major issue on Fremont Lake in the past, only 5 individuals were caught in the 2025 survey. This may have been due to the cold water temperatures encountered during the survey. Riparian landowners report that Common Carp remain very abundant on Fremont Lake and that they continue to be a nuisance. Unfortunately, there are few viable options for controlling their numbers.

Compared to other medium-sized, deep lakes in Michigan, Fremont Lake has average numbers of docks and dwelling density (Table 7; Wehrly et al. 2015). Fremont Lake did have more submerged woody habitat than other medium-sized, deep lakes in Michigan. However, Fremont Lake had more than four times the amount of shoreline armoring than other medium-sized, deep Michigan lakes. The Fremont Lake shoreline is clearly heavily developed and natural, undeveloped shoreline is severely lacking.

### **Management Direction**

Based on the 2025 fisheries survey results and the 2022 population estimate (Martin 2023), the Walleye fishery of Fremont Lake continues to be robust and offers excellent angling opportunities. The recent stocking regimen of 39,500 spring fingerlings (approximately 50/acre) on a biannual basis seems to be creating the desired fishery, with assistance from natural reproduction, at least in some years. Therefore, the Walleye stocking program should continue. Because Walleye were last stocked into Fremont Lake in 2023, it should be a high priority for stocking in 2026.

Fremont Lake offers tremendous opportunities for bowfishing, especially for Common Carp. The bowfishing potential of Fremont Lake should be advertised, and bowfishers should be encouraged to target Common Carp.

Improved shoreline management would greatly benefit the fish populations and the overall ecosystem of Fremont Lake. Seawalls, dredging, hardened and heavily developed shorelines, along with manicured lawns, do not provide the appropriate habitat for the Fremont Lake ecosystem. Instead, consideration for the Fremont Lake ecosystem should be factored into development plans. Concepts like setbacks and buffer strips, natural shorelines with native vegetation, and features designed to improve habitat for Fremont Lake fish and wildlife should be strongly considered when development planning is conducted.

The Michigan Natural Shoreline Partnership, an organization dedicated to promoting natural shoreline landscaping to protect Michigan's inland lakes (<http://www.mishorelinepartnership.org/>), can provide guidance and training on how best to manage the land/water interface for the benefit of Fremont Lake. Placing downed trees in the shallow areas of the lake provides excellent habitat for numerous popular species, including Largemouth Bass, Smallmouth Bass, and panfish. Any trees that fall into the lake should be left alone as fisheries habitat. In addition, trees could be intentionally placed in appropriate shallow water areas of Fremont Lake to provide cover and habitat for desirable fish species. Emergent woody structures also provide basking habitat for turtles.

A healthy aquatic plant community is critical for the fish community of Fremont Lake, particularly for important species like Bluegill, Pumpkinseed, Largemouth Bass, and many others. Aquatic plants, both native and non-native, should only be chemically treated when they become a nuisance to recreation or navigation. This will result in lower expenses for Fremont Lake riparian landowners and a healthier Fremont Lake ecosystem. Copper sulfate-based products should not be used under any circumstances, as they are known to be extremely harmful to aquatic insect populations, especially mayflies, and will accumulate in sediment leading to long-term exposure and toxicity.

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**Tables and Figures**

Table 1. Fish stocked in Fremont Lake, Newaygo County, 1876-2025.

Year	Species	Number	Size	Strain
1876	Lake Whitefish	30,000	fry	Detroit River
1893	Lake Trout	45,000		
1894	Lake Trout	15,000		
1895	Lake Trout	15,000		
1910	Largemouth Bass	6,000	fry	
1933	Bluegill	20,000	5 mo.	
	Yellow Perch	20,000	7 mo.	
1934	Bluegill	2,500	4 mo.	
	Emerald Shiner	400,000		
	Largemouth Bass	1,020	4 mo.	
	Yellow Perch	8,000	7 mo.	
1935	Bluegill	9,000	5 mo.	
	Rainbow Trout	9	adults	
	Smallmouth Bass	1,950	3 mo.	
	Walleye	829	adults	
	Yellow Perch	5,000	7 mo.	
1936	Bluegill	15,000	4 mo.	
	Smallmouth Bass	7,500	1 mo.	
	Walleye	274	adults	
	Yellow Perch	10,000	8 mo.	
1937	Bluegill	12,000	5 mo.	
	Walleye	251	adults	
1938	Bluegill	20,000	3 mo.	
	Largemouth Bass	2,000	5 mo.	
	Smallmouth Bass	870	5 mo.	
	Walleye	480	adults	
	Yellow Perch	4,500	6 mo.	
1939	Bluegill	10,000	4 mo.	
	Smallmouth Bass	1,500	4 mo.	
	Walleye	278	adults	
	Yellow Perch	7,500	7 mo.	
1940	Bluegill	5,387	3 mo.	
	Northern Pike	8	adults	
	Smallmouth Bass	1,350	3 mo.	
	Walleye	122	adults	
	Yellow Perch	6	adults	

Table 1 continued. Fish stocked in Fremont Lake, Newaygo County, 1876-2025.

Year	Species	Number	Size	Strain
1941	Bluegill	10,000	3 mo.	
	Largemouth Bass	1,000	3 mo.	
	Smallmouth Bass	1,288	3 mo.	
1942	Bluegill	1,000	5 mo.	
	Largemouth Bass	1,500	3 mo.	
	Smallmouth Bass	1,000	3 mo.	
	Walleye	751	adults	
1944	Largemouth Bass	1,500	4 mo.	
1971	Rainbow Trout	30,000	yearlings	
1973	Rainbow Trout	8,000	yearlings	
1983	Black Crappie	4	adults	
	Bluegill	1,550	adults	
	Brown Trout	13,375	yearling	Harrietta
	Brown Trout	14,000	fall fingerlings	Plymouth Rock
	Largemouth Bass	388	adults	
	Rainbow Trout	13,375	yearling	Harrietta
	Smallmouth Bass	765	adults	
	Walleye	2,965,000	fry	Muskegon
	Walleye	700	adults	Muskegon
	Yellow Perch	34	adults	
	1984	Brown Trout	10,606	yearling
Rainbow Trout		11,114	yearling	Michigan
Smallmouth Bass		410	yearling	
Walleye		107	adults	Muskegon
Walleye		21,381	fall fingerlings	Muskegon
1985	Brown Trout	10,130	yearling	Wild Rose
	Fathead Minnow	345,245		
	Rainbow Trout	13,000	yearling	Shasta
1986	Walleye	3,273	fall fingerlings	Muskegon
	Brown Trout	23	adults	
	Brown Trout	10,550	yearling	Soda Lake
	Rainbow Trout	20,000	yearling	Shasta
	Walleye	684	fall fingerlings	Muskegon
1987	Walleye	51,000	spring fingerlings	Muskegon
	Brown Trout	10,800	yearling	
1987	Rainbow Trout	20,000	yearling	Shasta
	Walleye	24,600	spring fingerlings	Muskegon

Table 1 continued. Fish stocked in Fremont Lake, Newaygo County, 1876-2025.

Year	Species	Number	Size	Strain
1988	Brown Trout	12,000	yearling	Soda Lake
	Rainbow Trout	20,006	yearling	Eagle Lake
	Walleye	1,276	fall fingerlings	Muskegon
1989	Brown Trout	12,000	yearling	Soda Lake
	Rainbow Trout	20,000	yearling	Shasta
	Walleye	30,814	spring fingerlings	Muskegon
1990	Brown Trout	12,000	yearling	Soda Lake
	Rainbow Trout	20,000	yearling	Eagle Lake
1991	Brown Trout	11,900	yearling	Plymouth Rock
	Rainbow Trout	16,899	yearling	Arlee
	Walleye	60,803	spring fingerlings	Muskegon
1992	Walleye	90,597	spring fingerlings	Muskegon
	Walleye	3,000	fall fingerlings	Muskegon
1994	Walleye	83,088	spring fingerlings	Muskegon
1996	Walleye	82,131	spring fingerlings	Muskegon
1997	Walleye	72,787	spring fingerlings	Muskegon
1999	Walleye	81,068	spring fingerlings	Muskegon
2001	Walleye	101,319	spring fingerlings	Muskegon
2003	Walleye	79,098	spring fingerlings	Muskegon
2005	Walleye	79,384	spring fingerlings	Muskegon
2008	Walleye	39,444	spring fingerlings	Muskegon
2010	Walleye	41,243	spring fingerlings	Muskegon
2012	Walleye	41,662	spring fingerlings	Muskegon
2014	Walleye	51,646	spring fingerlings	Muskegon
2016	Walleye	39,200	spring fingerlings	Muskegon
2018	Walleye	39,500	spring fingerlings	Muskegon
2022	Walleye	35,694	spring fingerlings	Muskegon
2023	Walleye	39,489	spring fingerlings	Muskegon

Table 2. Fish species detected (x) in historical fisheries surveys of Fremont Lake, Newaygo County.

Species	1892	1926	1934	1935	1938	1941	1952	1969	1981	1982
Banded Killifish		x	x	x	x	x	x			
Bigmouth Shiner			x	x		x				
Black Crappie	x	x		x			x	x	x	x
Blackchin Shiner		x	x	x		x	x			
Blacknose Dace				x	x					
Blacknose Shiner		x	x	x	x	x				
Bluegill	x	x		x			x	x	x	x
Bluntnose Minnow		x	x	x	x	x	x			
Bowfin							x			
Brown Bullhead							x			x
Brown Trout										
Bullhead spp.	x							x		
Cisco	x									
Common Carp							x	x	x	x
Common Shiner				x	x					
Creek Chub				x	x					
Emerald Shiner				x						
Fathead Minnow										
Gilbert's Minnow*		x								
Golden Shiner	x	x	x	x			x			
Horned Dace*				x						
Iowa Darter		x		x		x				
Johnny Darter		x	x	x	x	x				
Largemouth Bass	x	x	x	x	x		x	x	x	x
Longnose Gar							x	x	x	x
Mimic Shiner				x						
Northern Redbelly Dace				x						
Northern Pike				x			x	x	x	x
Pumpkinseed		x	x	x	x		x			x
Rainbow Trout										
Rock Bass	x	x					x	x	x	x
Rosyface Shiner				x						
Sand Shiner			x	x	x	x				
Skipjack*		x			x					
Smallmouth Bass		x						x		x
Walleye	x						x	x		
Warmouth										
White Sucker	x			x			x	x	x	x
Yellow Bullhead					x		x			
Yellow Perch	x	x	x	x	x		x	x	x	x

\*No species exists today with these names. What species of fish the researchers were referring to is unknown.



Table 3. Catch of age-0 and age-1 Walleye caught in MDNR fall electrofishing surveys of Fremont Lake, Newaygo County, MI in 2005, 2018, and 2022. Catch rates are expressed as the number of Walleye captured per mile of sampling.

		# Walleye captured	Catch Rate (#/mile)
2005	Age-0	12	4.2
	Age-1	0	0
2018	Age-0	111	21.8
	Age-1	9	1.8
2022	Age-0	4	0.8
	Age-1	0	0

Table 4. Michigan DNR Master Angler awards issued for fish caught from Fremont Lake, Newaygo County, Michigan, 1994-2025.

Species	Number of Master Angler awards issued
Bluegill	7
Black Crappie	4
Common Carp	4
Walleye	4
Bullhead	3
Largemouth Bass	3
Smallmouth Bass	3
Northern Pike	2
Rock Bass	1
White Sucker	1
Total:	38

Table 5. Catch, weight, and length of fish collected from Fremont Lake, Newaygo County, with trap nets, large mesh fyke nets, small mesh fyke nets, inland gill nets, seining, and electrofishing, May 12-June 26, 2025.

Species	Number	Percent by number	Weight (pounds)	Percent by weight	Length range (inches) <sup>1</sup>	Average length	Percent legal size <sup>2</sup>
Black Crappie	126	11.0	23.9	4.5	2-14	6.8	16 (7")
Bluegill	14	1.2	1.0	0.2	1-8	3.8	7 (6")
Bluntnose Minnow	537	47.1	3.7	0.7	2-3	2.6	
Brown Bullhead	12	1.1	12.6	2.4	12-13	13.2	100 (7")
Common Carp	5	0.4	24.9	4.6	4-28	17.5	
Fathead Minnow	4	0.4	0.0	0.0	2-2	2.5	
Largemouth Bass	33	2.9	86.5	16.1	11-19	16.9	97 (14")
Northern Pike	34	3.0	140.3	26.2	20-35	26.0	79 (24")
Pumpkinseed	1	0.1	0.0	0.0	20-35	3.5	0 (6")
Rock Bass	70	6.1	40.6	7.6	2-11	8.9	96 (6")
Smallmouth Bass	17	1.5	23.8	4.4	8-18	13.1	29 (14")
Walleye	79	6.9	128.4	24.0	9-24	16.5	68 (15")
White Sucker	22	1.9	42.5	7.9	8-23	16.1	
Yellow Perch	147	12.9	1.7	0.3	2-9	4.9	14 (7")
Yellow Bullhead	40	3.5	5.9	1.1	2-14	11.9	98 (7")
Total	1,141	100	535.8	100			

<sup>1</sup>Note some fish were measured to 0.1 inch, others to inch group: e.g., "5"=5.0 to 5.9 inch, "12"=12.0 to 12.9 inches; etc .

<sup>2</sup>Percent legal size or acceptable size for angling. Legal size or acceptable size for angling is given in parentheses.

Table 6. Length frequency distribution for fish species caught from Fremont Lake, Newaygo County using trap nets, large mesh fyke nets, small mesh fyke nets, inland gillnets, seining, and electrofishing, May and June 2025.

Inch Class	Black Crappie	Bluegill	Bluntnose Minnow	Brown Bullhead	Common Carp	Fathead Minnow	Large-mouth Bass	Northern Pike
1		1						
2	1	7	478			4		
3	2	1	59					
4					2			
5	2	4						
6	101							
7	12							
8	1	1						
9	2							
10	2							
11							1	
12	2			4				
13				8				
14	1						3	
15							4	
16							9	
17							6	
18							9	
19							1	
20								1
21								2
22								1
23								3
24					1			8
25					1			3
26								5
27								6
28					1			1
29								1
30								1
31								
32								
33								
34								1
35								1
Total	126	14	537	12	5	4	33	34

Table 6, continued. Length frequency distribution for fish species caught from Fremont Lake, Newaygo County with trap nets, large mesh fyke nets, small mesh fyke nets, inland gillnets, seining, and electrofishing, May and June 2025.

Inch Class	Pumpkin-seed	Rock Bass	Small-mouth Bass	Walleye	White Sucker	Yellow Perch	Yellow Bullhead
1							
2		1				5	1
3	1					54	
4		1				23	
5		1				33	
6		3				12	
7		8				11	
8		19	3			7	1
9		20	2	2		2	2
10		14					5
11		3	1	2	1		6
12			2	11	7		15
13			4	6	2		8
14			1	4			2
15				2	1		
16				13	3		
17			1	17	2		
18			3	7			
19				7	1		
20				3	1		
21				2	2		
22					1		
23				1	1		
24				2			
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
Total	1	70	17	79	22	147	40

Table 7. Average total weighted-length (inches) at age (I through XIII), and growth-index relative to the state average, for fish sampled from Fremont Lake, Newaygo County, with trap nets, inland gill nets, seining, and electrofishing, May and June 2025. Number of fish aged is given in parenthesis. A minimum of five fish per age group is statistically necessary for calculating a Mean Growth Index, which is a comparison to the State of Michigan average.

Species	I	II	III	IV	V	VI	VII	VIII	IX	XII	Mean Growth Index
Black Crappie	3.3	6.6	6.7	9.9	12.3						-1.0
Black Crappie	(2)	(14)	(15)	(3)	(2)						
Bluegill	3.2	5.4				8.1					--
Bluegill	(1)	(4)				(1)					
Largemouth Bass				15.9	14.3	17.0	16.7	18.3	18.5		+0.8
Largemouth Bass				(2)	(5)	(3)	(12)	(10)	(1)		
Northern Pike		20.5	24.5	24.9	25.6	29.4					+1.9
Northern Pike		(1)	(7)	(9)	(10)	(8)					
Pumpkinseed		3.6									--
Pumpkinseed		(1)									
Smallmouth Bass		8.2	11.1	12.5	15.6		18.1				+0.3
Smallmouth Bass		(2)	(5)	(4)	(2)		(3)				
Walleye	9.9	12.6	16.8				21.0			24.7	+1.8
Walleye	(1)	(14)	(46)				(9)			(1)	
Yellow Perch	3.3	5.0	5.9	6.7	7.6	8.9	7.1				+0.7
Yellow Perch	(11)	(16)	(6)	(12)	(9)	(5)	(1)				

Table 8. Shoreline development data for Fremont Lake, Newaygo County, compared with that for other medium-sized, deep depth lakes in Michigan (from Wehrly et al. 2015). In 2025, sampling was conducted by MDNR Fisheries personnel on August 15, 2025.

Shoreline Parameter	Fremont Lake 2009	Fremont Lake 2025	State Average
Total docks per km	16.3	18.4	12.7
Dwellings per km	19.9	16.5	16.7
Percent shoreline armoring	47.0	56.0	25.3
Submerged trees per km	44.8	64.3	14.5

Table 9. Temperature and dissolved oxygen profile for Fremont Lake, Newaygo County, on 8/15/2025.

Depth (feet)	Temperature (F)	O2 (ppm)
0	80.2	9.37
3	79.9	9.36
6	79.6	9.33
9	79.4	9.36
12	79.2	9.26
15	78.8	9.25
18	77.1	5.85
19	75.4	3.68
20	73.9	2.20
21	71.2	0
22	69.9	0
23	66.2	0
24	64.0	0
25	62.6	0
26	60.7	0
27	59.6	0
28	57.4	0
29	55.5	0
30	54.3	0
33	52.3	0
36	51.1	0
39	49.3	0
42	48.8	0
45	48.2	0
48	47.8	0
51	47.5	0
54	47.2	0
57	47.0	0
60	46.9	0
63	46.8	0
66	46.7	0
69	46.7	0
72	46.6	0
75	46.5	0
78	46.5	0
81	46.4	0
84	46.3	0

Figure 1. Fremont Lake, Newaygo County, Michigan.

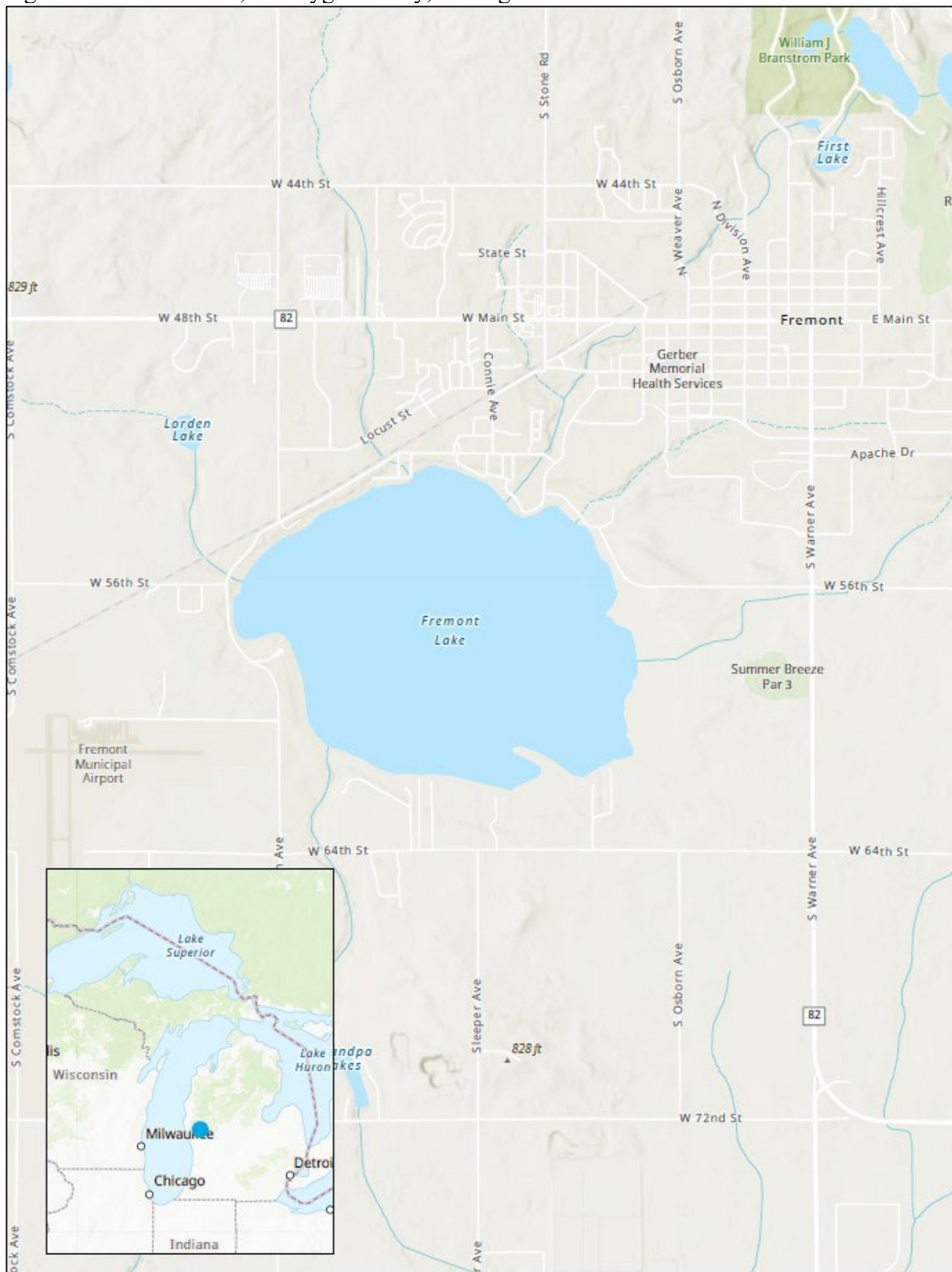


Figure 2. Lakeshed map for Fremont Lake, Newaygo County, MI.

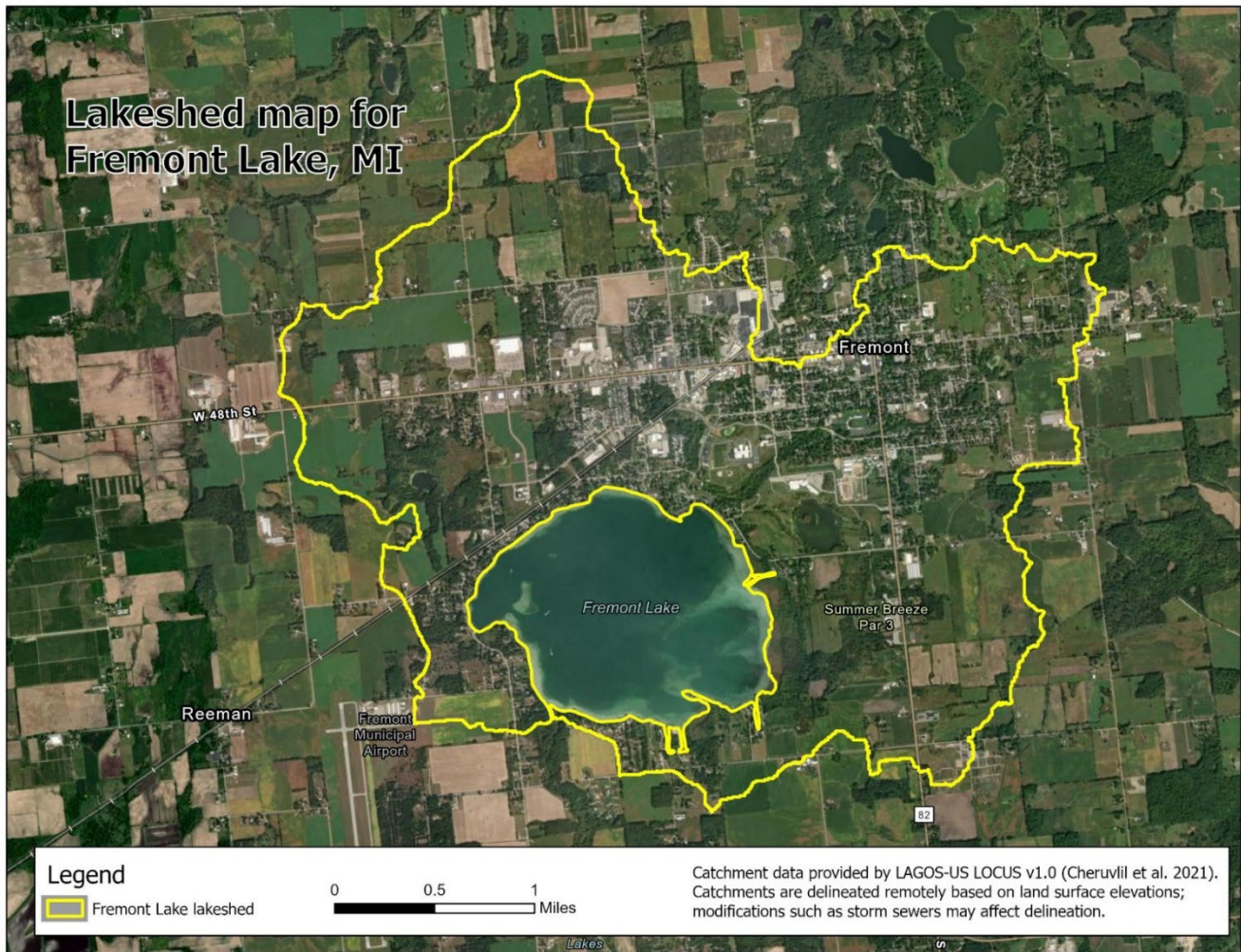
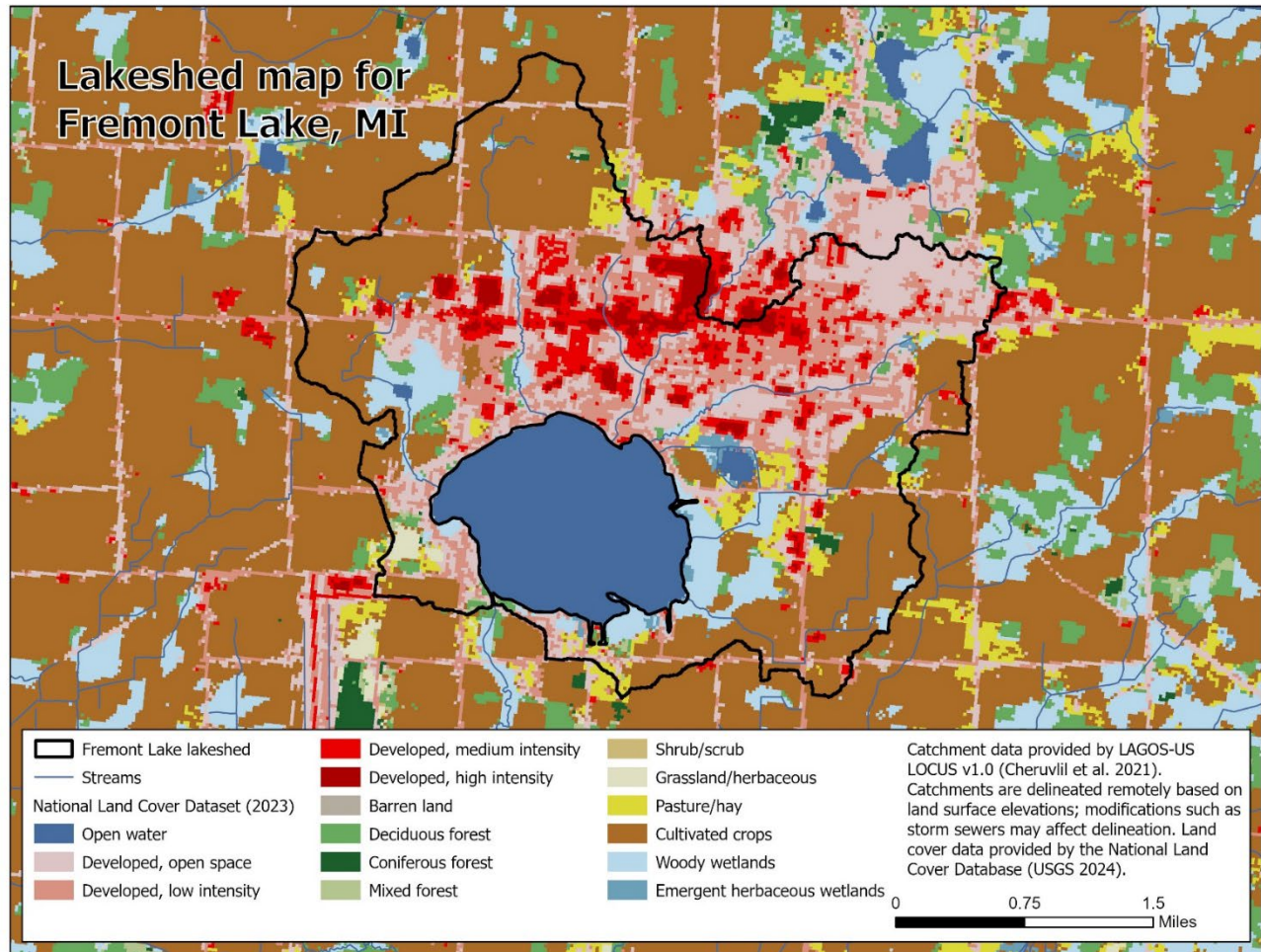


Figure 3. Lakeshed landcover map for Fremont Lake, Newaygo County, Michigan.



**Literature Path**

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